

Name: \_\_\_\_\_

### pa1106: Factoring with box when $a = \text{prime}$ (v1)

#### Example

Use the box to factor  $2x^2 - 9x - 18$ .

Guess and check, based on factor pairs of  $-18$ , until you find the pair that results in a linear coefficient of  $-9$  after combining like terms.

*	x	
2x	$2x^2$	$-12x$
3	$3x$	$-18$

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER:  $(2x + 3)(x - 6)$

#### Question 1

Use the box to factor  $3x^2 + 31x + 56$ .

*	x	
3x	$3x^2$	$24x$
7	$7x$	56

ANSWER:  $(3x + 7)(x + 8)$

### Question 2

Use the box to factor  $5x^2 - 3x - 14$ .

*	x	-2
5x	$5x^2$	-10x
7	7x	-14

ANSWER:  $(5x + 7)(x - 2)$

### Question 3

Use the box to factor  $7x^2 - 61x + 40$ .

*	x	-8
7x	$7x^2$	-56x
-5	-5x	40

ANSWER:  $(7x - 5)(x - 8)$